

## **RAW SEQUENCE LISTING**

**The Biotechnology Systems Branch of the Scientific and Technical  
Information Center (STIC) no errors detected.**

Application Serial Number: 10/664,421A  
Source: 1Fw16  
Date Processed by STIC: 11/3/06

# ***ENTERED***



IFW16

## RAW SEQUENCE LISTING

DATE: 11/03/2006

PATENT APPLICATION: US/10/664,421A

TIME: 17:12:55

Input Set : A:\39363703.APP

Output Set: N:\CRF4\11032006\J664421A.raw

3 <110> APPLICANT: BREMER, RYAN  
 4 IBRAHIM, PRABHA  
 5 KUMAR, ABHINAV  
 6 MANDIYAN, VALSAN  
 7 MILBURN, MICHAEL V.  
 9 <120> TITLE OF INVENTION: CRYSTAL STRUCTURE OF PIM-1 KINASE  
 11 <130> FILE REFERENCE: 039363/0703  
 13 <140> CURRENT APPLICATION NUMBER: 10/664,421A  
 14 <141> CURRENT FILING DATE: 2003-09-16  
 16 <150> PRIOR APPLICATION NUMBER: 60/412,341  
 17 <151> PRIOR FILING DATE: 2002-09-20  
 19 <150> PRIOR APPLICATION NUMBER: 60/411,398  
 20 <151> PRIOR FILING DATE: 2002-09-16  
 22 <160> NUMBER OF SEQ ID NOS: 173  
 24 <170> SOFTWARE: PatentIn Ver. 3.3  
 26 <210> SEQ ID NO: 1  
 27 <211> LENGTH: 313  
 28 <212> TYPE: PRT  
 29 <213> ORGANISM: Homo sapiens  
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 35 Cys Asn Asp Leu His Ala Thr Lys Leu Ala Pro Gly Lys Glu Lys Glu  
 36 20 25 30  
 38 Pro Leu Glu Ser Gln Tyr Gln Val Gly Pro Leu Leu Gly Ser Gly Gly  
 39 35 40 45  
 41 Phe Gly Ser Val Tyr Ser Gly Ile Arg Val Ser Asp Asn Leu Pro Val  
 42 50 55 60  
 44 Ala Ile Lys His Val Glu Lys Asp Arg Ile Ser Asp Trp Gly Glu Leu  
 45 65 70 75 80  
 47 Pro Asn Gly Thr Arg Val Pro Met Glu Val Val Leu Leu Lys Lys Val  
 48 85 90 95  
 50 Ser Ser Gly Phe Ser Gly Val Ile Arg Leu Leu Asp Trp Phe Glu Arg  
 51 100 105 110  
 53 Pro Asp Ser Phe Val Leu Ile Leu Glu Arg Pro Glu Pro Val Gln Asp  
 54 115 120 125  
 56 Leu Phe Asp Phe Ile Thr Glu Arg Gly Ala Leu Gln Glu Glu Leu Ala  
 57 130 135 140  
 59 Arg Ser Phe Phe Trp Gln Val Leu Glu Ala Val Arg His Cys His Asn  
 60 145 150 155 160  
 62 Cys Gly Val Leu His Arg Asp Ile Lys Asp Glu Asn Ile Leu Ile Asp  
 63 165 170 175  
 65 Leu Asn Arg Gly Glu Leu Lys Leu Ile Asp Phe Gly Ser Gly Ala Leu

*see p. 6*

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66          180          185          190
68 Leu Lys Asp Thr Val Tyr Thr Asp Phe Asp Gly Thr Arg Val Tyr Ser
69          195          200          205
71 Pro Pro Glu Trp Ile Arg Tyr His Arg Tyr His Gly Arg Ser Ala Ala
72          210          215          220
74 Val Trp Ser Leu Gly Ile Leu Leu Tyr Asp Met Val Cys Gly Asp Ile
75 225          230          235          240
77 Pro Phe Glu His Asp Glu Glu Ile Ile Arg Gly Gln Val Phe Phe Arg
78          245          250          255
80 Gln Arg Val Ser Ser Glu Cys Gln His Leu Ile Arg Trp Cys Leu Ala
81          260          265          270
83 Leu Arg Pro Ser Asp Arg Pro Thr Phe Glu Glu Ile Gln Asn His Pro
84          275          280          285
86 Trp Met Gln Asp Val Leu Leu Pro Gln Glu Thr Ala Glu Ile His Leu
87          290          295          300
89 His Ser Leu Ser Pro Gly Pro Ser Lys
90 305          310
93 <210> SEQ ID NO: 2
94 <211> LENGTH: 313
95 <212> TYPE: PRT
96 <213> ORGANISM: Mus musculus
98 <400> SEQUENCE: 2
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102 Cys Asn Asp Leu His Ala Thr Lys Leu Ala Pro Gly Lys Glu Lys Glu
103          20          25          30
105 Pro Leu Glu Ser Gln Tyr Gln Val Gly Pro Leu Leu Gly Ser Gly Gly
106          35          40          45
108 Phe Gly Ser Val Tyr Ser Gly Ile Arg Val Ala Asp Asn Leu Pro Val
109          50          55          60
111 Ala Ile Lys His Val Glu Lys Asp Arg Ile Ser Asp Trp Gly Glu Leu
112 65          70          75          80
114 Pro Asn Gly Thr Arg Val Pro Met Glu Val Val Leu Leu Lys Lys Val
115          85          90          95
117 Ser Ser Asp Phe Ser Gly Val Ile Arg Leu Leu Asp Trp Phe Glu Arg
118          100          105          110
120 Pro Asp Ser Phe Val Leu Ile Leu Glu Arg Pro Glu Pro Val Gln Asp
121          115          120          125
123 Leu Phe Asp Phe Ile Thr Glu Arg Gly Ala Leu Gln Glu Asp Leu Ala
124          130          135          140
126 Arg Gly Phe Phe Trp Gln Val Leu Glu Ala Val Arg His Cys His Asn
127 145          150          155          160
129 Cys Gly Val Leu His Arg Asp Ile Lys Asp Glu Asn Ile Leu Ile Asp
130          165          170          175
132 Leu Ser Arg Gly Glu Ile Lys Leu Ile Asp Phe Gly Ser Gly Ala Leu
133          180          185          190
135 Leu Lys Asp Thr Val Tyr Thr Asp Phe Asp Gly Thr Arg Val Tyr Ser
136          195          200          205
138 Pro Pro Glu Trp Ile Arg Tyr His Arg Tyr His Gly Arg Ser Ala Ala

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Input Set : A:\39363703.APP

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139      210      215      220
141 Val Trp Ser Leu Gly Ile Leu Leu Tyr Asp Met Val Cys Gly Asp Ile
142 225      230      235      240
144 Pro Phe Glu His Asp Glu Glu Ile Ile Lys Gly Gln Val Phe Phe Arg
145      245      250      255
147 Gln Thr Val Ser Ser Glu Cys Gln His Leu Ile Lys Trp Cys Leu Ser
148      260      265      270
150 Leu Arg Pro Ser Asp Arg Pro Ser Phe Glu Glu Ile Arg Asn His Pro
151      275      280      285
153 Trp Met Gln Gly Asp Leu Leu Pro Gln Ala Ala Ser Glu Ile His Leu
154      290      295      300
156 His Ser Leu Ser Pro Gly Ser Ser Lys
157 305      310
160 <210> SEQ ID NO: 3
161 <211> LENGTH: 323
162 <212> TYPE: PRT
163 <213> ORGANISM: Homo sapiens
165 <400> SEQUENCE: 3
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169 Thr Pro Pro Pro Gly Gly Lys Asp Arg Glu Ala Phe Glu Ala Glu Tyr
170      20      25      30
172 Arg Leu Gly Pro Leu Leu Gly Lys Gly Gly Phe Gly Thr Val Phe Ala
173      35      40      45
175 Gly His Arg Leu Thr Asp Arg Leu Gln Val Ala Ile Lys Val Ile Pro
176      50      55      60
178 Arg Asn Arg Val Leu Gly Trp Ser Pro Leu Ser Asp Ser Val Thr Cys
179 65      70      75      80
181 Pro Leu Glu Val Ala Leu Leu Trp Lys Val Gly Ala Gly Gly Gly His
182      85      90      95
184 Pro Gly Val Ile Arg Leu Leu Asp Trp Phe Glu Thr Gln Glu Gly Phe
185      100      105      110
187 Met Leu Val Leu Glu Arg Pro Leu Pro Ala Gln Asp Leu Phe Asp Tyr
188      115      120      125
190 Ile Thr Glu Lys Gly Pro Leu Gly Glu Gly Pro Ser Arg Cys Phe Phe
191      130      135      140
193 Gly Gln Val Val Ala Ala Ile Gln His Cys His Ser Arg Gly Val Val
194 145      150      155      160
196 His Arg Asp Ile Lys Asp Glu Asn Ile Leu Ile Asp Leu Arg Arg Gly
197      165      170      175
199 Cys Ala Lys Leu Ile Asp Phe Gly Ser Gly Ala Leu Leu His Asp Glu
200      180      185      190
202 Pro Tyr Thr Asp Phe Asp Gly Thr Arg Val Tyr Ser Pro Pro Glu Trp
203      195      200      205
205 Ile Ser Arg His Gln Tyr His Ala Leu Pro Ala Thr Val Trp Ser Leu
206      210      215      220
208 Gly Ile Leu Leu Tyr Asp Met Val Cys Gly Asp Ile Pro Phe Glu Arg
209 225      230      235      240
211 Asp Gln Glu Ile Leu Glu Ala Glu Leu His Phe Pro Ala His Val Ser

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TIME: 17:12:55

Input Set : A:\39363703.APP

Output Set: N:\CRF4\11032006\J664421A.raw

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212          245          250          255
214 Pro Asp Cys Cys Ala Leu Ile Arg Arg Cys Leu Ala Pro Lys Pro Ser
215          260          265          270
217 Ser Arg Pro Ser Leu Glu Glu Ile Leu Leu Asp Pro Trp Met Gln Thr
218          275          280          285
220 Pro Ala Glu Asp Val Thr Pro Gln Pro Leu Gln Arg Arg Pro Cys Pro
221          290          295          300
223 Phe Gly Leu Val Leu Ala Thr Leu Ser Leu Ala Trp Pro Gly Leu Ala
224 305          310          315          320
226 Pro Asn Gly
230 <210> SEQ ID NO: 4
231 <211> LENGTH: 311
232 <212> TYPE: PRT
233 <213> ORGANISM: Mus musculus
235 <400> SEQUENCE: 4
236 Met Leu Thr Lys Pro Leu Gln Gly His Pro Ser Pro Pro Val Thr Pro
237 1          5          10          15
239 Thr Gln Pro Pro Gly Gly Lys Asp Arg Ala Ala Phe Glu Ala Glu Tyr
240          20          25          30
242 Arg Leu Gly Pro Leu Leu Gly Lys Gly Gly Phe Gly Thr Val Phe Ala
243          35          40          45
245 Gly His Arg Val Thr Asp Arg Arg Gln Val Ala Ile Lys Val Ile Ser
246          50          55          60
248 Arg Asn Arg Val Leu Gly Trp Ser Thr Val Ser Asp Ser Val Thr Cys
249 65          70          75          80
251 Pro Leu Glu Val Ala Leu Leu Trp Lys Val Gly Glu Gly Asn Gly His
252          85          90          95
254 Pro Gly Val Ile Arg Leu Leu Asp Trp Phe Glu Thr Pro Glu Gly Phe
255          100          105          110
257 Met Leu Val Leu Glu Arg Pro Met Pro Ala Gln Asp Leu Phe Asp Tyr
258          115          120          125
260 Ile Thr Glu Lys Gly Pro Leu Gly Glu Ser Cys Ser Arg Ser Phe Phe
261          130          135          140
263 Thr Gln Val Val Ala Ala Val Gln His Cys His Ala Arg Gly Val Val
264 145          150          155          160
266 His Arg Asp Ile Lys Asp Glu Asn Ile Leu Ile Asp Leu Cys Arg Gly
267          165          170          175
269 Ser Ile Lys Leu Ile Asp Phe Gly Ser Gly Ala Leu Leu His Asp Glu
270          180          185          190
272 Pro Tyr Thr Asp Phe Asp Gly Thr Arg Val Tyr Ser Pro Pro Glu Trp
273          195          200          205
275 Ile Ser Arg His Gln Tyr His Ala Leu Pro Ala Thr Val Trp Ser Leu
276          210          215          220
278 Gly Val Leu Leu Tyr Asp Met Val Cys Gly Asp Ile Pro Phe Glu Arg
279 225          230          235          240
281 Asp Gln Glu Ile Leu Glu Ala Glu Leu His Phe Pro Ala His Val Ser
282          245          250          255
284 Pro Asp Cys Cys Ala Leu Ile Arg Arg Cys Leu Ala Pro Lys Pro Cys
285          260          265          270

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DATE: 11/03/2006

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TIME: 17:12:55

Input Set : A:\39363703.APP

Output Set: N:\CRF4\11032006\J664421A.raw


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287 Ser Arg Pro Ser Leu Glu Glu Ile Leu Leu Asp Pro Trp Met Gln Ser
288      275      280      285
290 Pro Ala Glu Glu Lys Pro Ile Asn Ser Ser Lys Gly Ser Pro Thr Pro
291      290      295      300
293 Leu Pro Trp Ser Leu Leu Pro
294 305      310
297 <210> SEQ ID NO: 5
298 <211> LENGTH: 296
299 <212> TYPE: PRT
300 <213> ORGANISM: Homo sapiens
302 <400> SEQUENCE: 5
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306 Gly Ser Gly Gly Phe Gly Thr Val Tyr Ala Gly Ser Arg Ile Ala Asp
307      20      25      30
309 Gly Leu Pro Val Ala Val Lys His Val Val Lys Glu Arg Val Thr Glu
310      35      40      45
312 Trp Gly Ser Leu Gly Gly Ala Thr Val Pro Leu Glu Val Val Leu Leu
313      50      55      60
315 Arg Lys Val Gly Ala Ala Gly Gly Ala Arg Gly Val Ile Arg Leu Leu
316 65      70      75      80
318 Asp Trp Phe Glu Arg Pro Asp Gly Phe Leu Leu Val Leu Glu Arg Pro
319      85      90      95
321 Glu Pro Ala Gln Asp Leu Phe Asp Phe Ile Thr Glu Arg Gly Ala Leu
322      100     105     110
324 Asp Glu Pro Leu Ala Arg Arg Phe Ala Gln Val Leu Ala Ala Val
325      115     120     125
327 Arg His Cys His Ser Cys Gly Val Val His Arg Asp Ile Lys Asp Glu
328      130     135     140
330 Asn Leu Leu Val Asp Leu Arg Ser Gly Glu Leu Lys Leu Ile Asp Phe
331 145      150     155     160
333 Gly Ser Gly Ala Leu Leu Lys Asp Thr Val Tyr Thr Asp Phe Asp Gly
334      165     170     175
336 Thr Arg Val Tyr Ser Pro Pro Glu Trp Ile Arg Tyr His Arg Tyr His
337      180     185     190
339 Gly Arg Ser Ala Thr Val Trp Ser Leu Gly Val Leu Leu Tyr Asp Met
340      195     200     205
342 Val Cys Gly Asp Ile Pro Phe Glu Gln Asp Glu Glu Ile Leu Arg Gly
343      210     215     220
345 Arg Leu Leu Phe Arg Arg Arg Val Ser Pro Glu Cys Gln Gln Leu Ile
346 225      230     235     240
348 Arg Trp Cys Leu Ser Leu Arg Pro Ser Glu Arg Pro Ser Leu Asp Gln
349      245     250     255
351 Ile Ala Ala His Pro Trp Met Leu Gly Ala Asp Gly Gly Ala Pro Glu
352      260     265     270
354 Ser Cys Asp Leu Arg Leu Cys Thr Leu Asp Pro Asp Asp Val Ala Ser
355      275     280     285
357 Thr Thr Ser Ser Ser Glu Ser Leu
358      290     295

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RAW SEQUENCE LISTING ERROR SUMMARY  
PATENT APPLICATION: US/10/664,421A

DATE: 11/03/2006  
TIME: 17:12:56

 Input Set : A:\39363703.APP  
Output Set: N:\CRF4\11032006\J664421A.raw

Please Note:

Use of n and/or Xaa have been detected in the Sequence Listing. Please review the Sequence Listing to ensure that a corresponding explanation is presented in the <220> to <223> fields of each sequence which presents at least one n or Xaa.

Seq#:20; Xaa Pos. 312

Seq#:29; Xaa Pos. 174,178,179

**VERIFICATION SUMMARY**

DATE: 11/03/2006

PATENT APPLICATION: US/10/664,421A

TIME: 17:12:56

Input Set : A:\39363703.APP

Output Set: N:\CRF4\11032006\J664421A.raw

L:1427 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:20 after pos.:304

L:2010 M:341 W: (46) "n" or "Xaa" used, for SEQ ID#:29 after pos.:160

M:341 Repeated in SeqNo=29